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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/589,390

08/15/2006

Shigeki Imai

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EXAMINER

DANG, PHUC T

ART UNIT

PAPER NUMBER

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MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/589,390	Applicant(s) IMAI ET AL.	
	Examiner Phuc T. Dang	Art Unit 2892	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on election filed on March 12, 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
4a) Of the above claim(s) 23-34 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 6, 11, 12 and 16-22 is/are rejected.
- 7) ☒ Claim(s) 4, 5, 7-10 and 13-15 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>081506, 041007, 052307 & 111307</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This application is a 371 of PCT/JP05/02352 filed on February 16, 2005.

Election/Restrictions

2. Applicant's election without traverse of Species I (claims 1-22) filed on March 12, 2008 and withdrawn Species II (claims 23, 25-28, 30 & 32-33) and Species III (claims 24, 29, 31 and 34) has been acknowledged and considered. Applicants have the right to file a divisional application covering the subject matter of the non-elected claims (claims 23-34).

Claims 1-34 are currently pending in the application.

Oath/Declaration

3. The oath/declaration filed on August 15, 2006 is acceptable.

Priority

4. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

5. The office acknowledges receipt of the following items from the applicant:

Information Disclosure Statement (IDS) filed on August 15, 2006, April 10, 2007, May 23, 2007 and November 13, 2007.

Specification

6. The specification has been checked to the extent necessary to determine the presence of all possible minor errors. However, the applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

7. Claim 12 is objected to because of the following reason:

In claim 12, line 2, "...the step of..." should replace by --...a step of...--.

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1-3, 6, 12-12 and 21-22 are rejected under 35 U.S.C. 102 (e) as being anticipated by Koizumi et al., hereafter "Koizumi" (U.S. Patent No. 7,156,962 B2).

Regarding claim 1, Koizumi discloses a method of manufacturing a thin film transistor including an oxide film, the method comprising the oxide film forming step of

immersing a substrate in an oxidizing solution containing an active oxidizing species for direct oxidation of the substrate to form a chemical oxide film, the substrate having a surface on which a chemical oxide film is to be formed (see col. 7, lines 13-18).

Regarding claim 2, Koizumi discloses in the oxide film forming step, the active oxidizing species is formed by heating the oxidizing solution or electrolyzing solution (see col. 10, lines 19-23).

Regarding claims 3 and 21-22, Koizumi discloses wherein the oxide film forming step, the substrate is immersed in the oxidizing solution of different concentrations and the concentration of the oxidizing solution is altered from a low-concentration oxidizing solution to a high-concentration oxidizing solution, wherein the oxide film having non-uniform thickness and quality to improve the quality of the oxide film (see col. 8, line 4+).

Regarding claim 6, Koizumi discloses wherein in the oxide film step, the chemical oxide film is growing on the substrate surface by applying voltage to the substrate on which the chemical oxide film is to be formed (see col. 12, lines 5-15).

Regarding claims 11-12, Koizumi discloses the temperature for the oxide film is used and a step of forming an insulating film on the chemical oxide film after forming the chemical oxide film (see col. 5, lines 56-62).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Koizumi in view of Sato et al., hereafter "Sato" (U.S. Patent No. 6,468,663 B1).

Regarding claim 8, Koizumi discloses the features of the claimed invention as discussed above, but does not disclose the chemicals are used in the oxidizing solution.

However, Sato, in the same filed of the endeavor, discloses the chemicals are used in the oxidizing solution (see col. 6, lines 4-9).

It would have been obvious to one having ordinary skilled in the art at the time the invention was made to modify the teaching of Koizumi as taught by Sato such that the chemicals are used in the oxidizing solution for a purpose of improving the process.

10. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Koizumi in view of Tsuzuki et al., hereafter "Tsuzuki" (U.S. Patent No. 7,112,264 B2).

Regarding claim 16, Koizumi discloses the features of the claimed invention as discussed above, but does not disclose the step of subjecting the chemical oxide films to nitriding after the oxide film forming step.

However, Tsuzuki, in the same filed of the endeavor, discloses the step of subjecting the chemical oxide films to nitriding after the oxide film forming step (see col. 2, lines 16-26).

It would have been obvious to one having ordinary skilled in the art at the time the invention was made to modify the teaching of Koizumi as taught by Sato such that the step of subjecting the chemical oxide films to nitriding after the oxide film forming step for a purpose of improving the process.

11. Claims 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koizumi in view of Kato (U.S. Publication No. US 2005/0036382 A1).

Regarding claims 17-20, Koizumi discloses the features of the claimed invention as discussed above, but does not disclose the chemical oxide film is a gate oxide that is used in a thin film transistor, wherein a display containing the thin film transistor.

However, SKato, in the same filed of the endeavor, discloses the chemical oxide film is a gate oxide that is used in a thin film transistor, wherein a display containing the thin film transistor (see paragraph [0012]-[0017]).

It would have been obvious to one having ordinary skilled in the art at the time the invention was made to modify the teaching of Koizumi as taught by Sato such that the chemical oxide film is a gate oxide that is used in a thin film transistor, wherein a display containing the thin film transistor for a purpose of improving the process.

Allowable Subject Matter

12. The following is a statement of reason for the indication of allowable subject matter:

Claims 4-5, 7-10 and 13-15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

13. Applicants are advised to cancel the non-elected claims (23-34) upon response to the next Office action if the application is considered to be allowed.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phuc T. Dang whose telephone number is 571-272-1776. The examiner can normally be reached on 8:00 am-5:00 pm.

15. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thao X. Le can be reached on (571) 272-1708. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications and Final communications.

Art Unit: 2892

16. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

Phuc T. Dang/Phuc T Dang/

Primary Examiner, Art Unit 2892